Wilmington District

Wilmington Harbor General Reevaluation Report

Cape Fear River Locks and Dams

Wilmington District

Purpose

- Discuss General Reevaluation Report (GRR)
- Describe Components of the GRR, Emphasis on the Cape Fear River Locks and Dams
- Receive Questions and Comments

Wilmington District

General Reevaluation Report (GRR)

- GRR used for reanalysis of a previously completed study where construction is not complete – Wilmington Harbor Deepening project
- Uses current planning criteria and policies
- Changed conditions and/or assumptions.
  - For example, mitigation features – Fish passage

Wilmington District

GRR Components

- Fish passage at the Cape Fear River Locks and Dams
- Protection and Restoration of Primary Nursery Area
- Relocation of a ship turning basin in the NE Cape Fear River

700 Acre Habitat Protection
Relocated Turning Basin
New Hanover County
Hilton RR Bridge
28 MI
Cape Fear Memorial Bridge
30 Acre Mitigation Site
State Port
Blasting
Atlantic Ocean
Brunswick County
MOTSU (Sunny Point)
Carolina Beach
6.2 Mile Passing Lane 42’ x 600’
Fort Fisher
Mouth of Cape Fear River
N
VA.
N.C.
Raleigh
N.C.
S.C.
Wilmington
Cape Fear River Site
N
WILMINGTON HARBOR GRR

Wilmington District

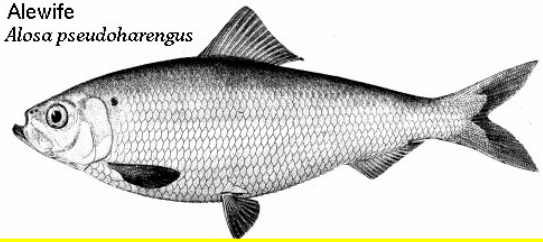
Rock Blasting

- NMFS Biological Opinion (BO) under the Endangered Species Act required:
  - Construct fish passage at Lock and Dam #1 for endangered shortnose sturgeon
  - Study feasibility of fish passage at other two locks and dams
- Without these conditions, blasting precluded
- 78 blasts to date, additional blasting may be required

Wilmington District

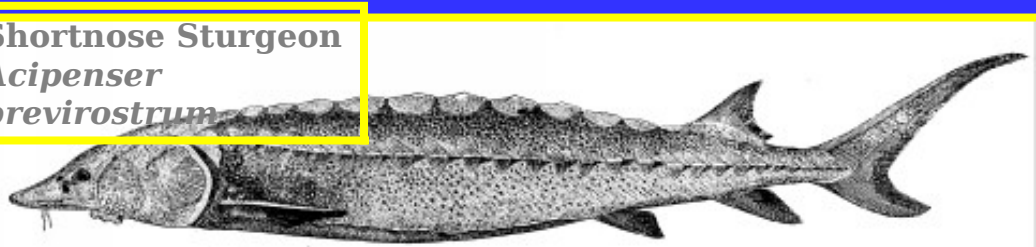
North Carolina Anadromous Fish

Alewife
Alosa pseudoharengus

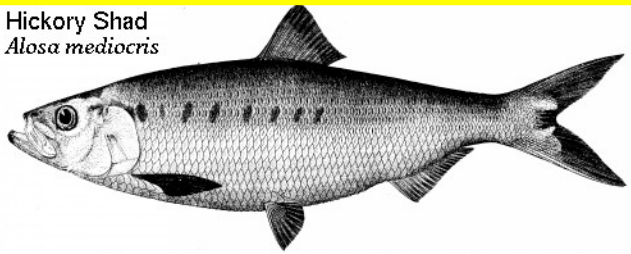


Atlantic Sturgeon
Acipenser oxyrhynchus

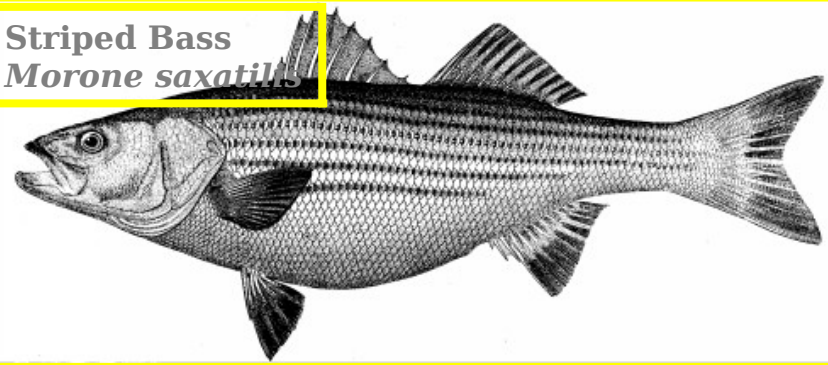
Shortnose Sturgeon
Acipenser brevirostrum



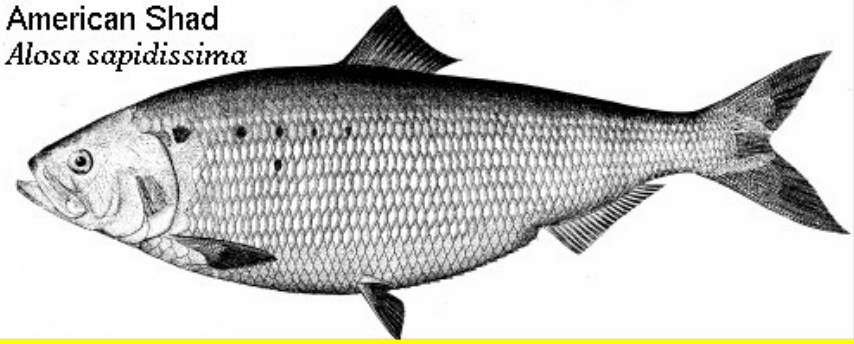
Hickory Shad
Alosa mediocris



Striped Bass
Morone saxatilis



American Shad
Alosa sapidissima



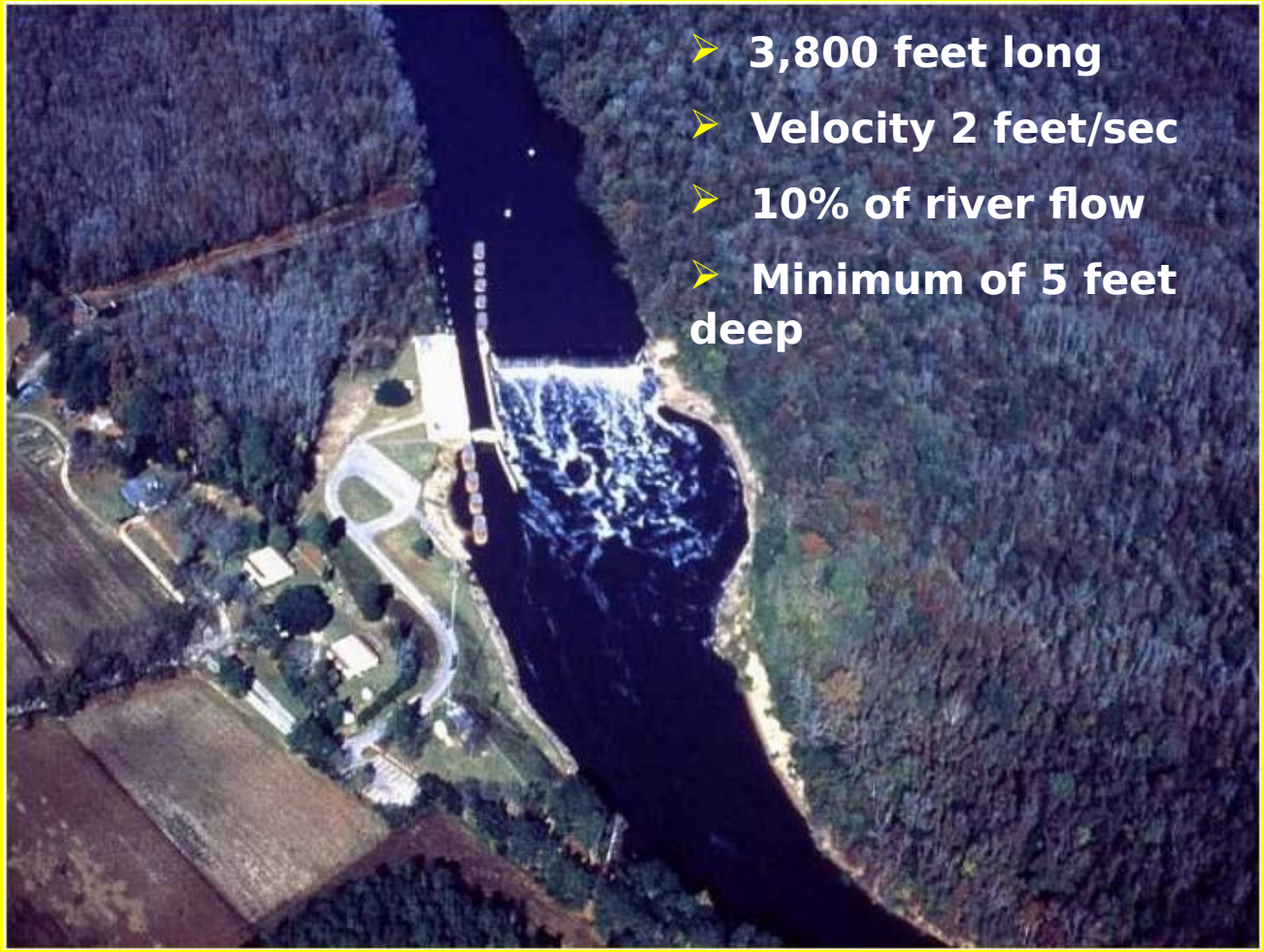
Wilmington District

Lock and Dam # 1 Fish Bypass

Wilmington District

Bypass Design Criteria

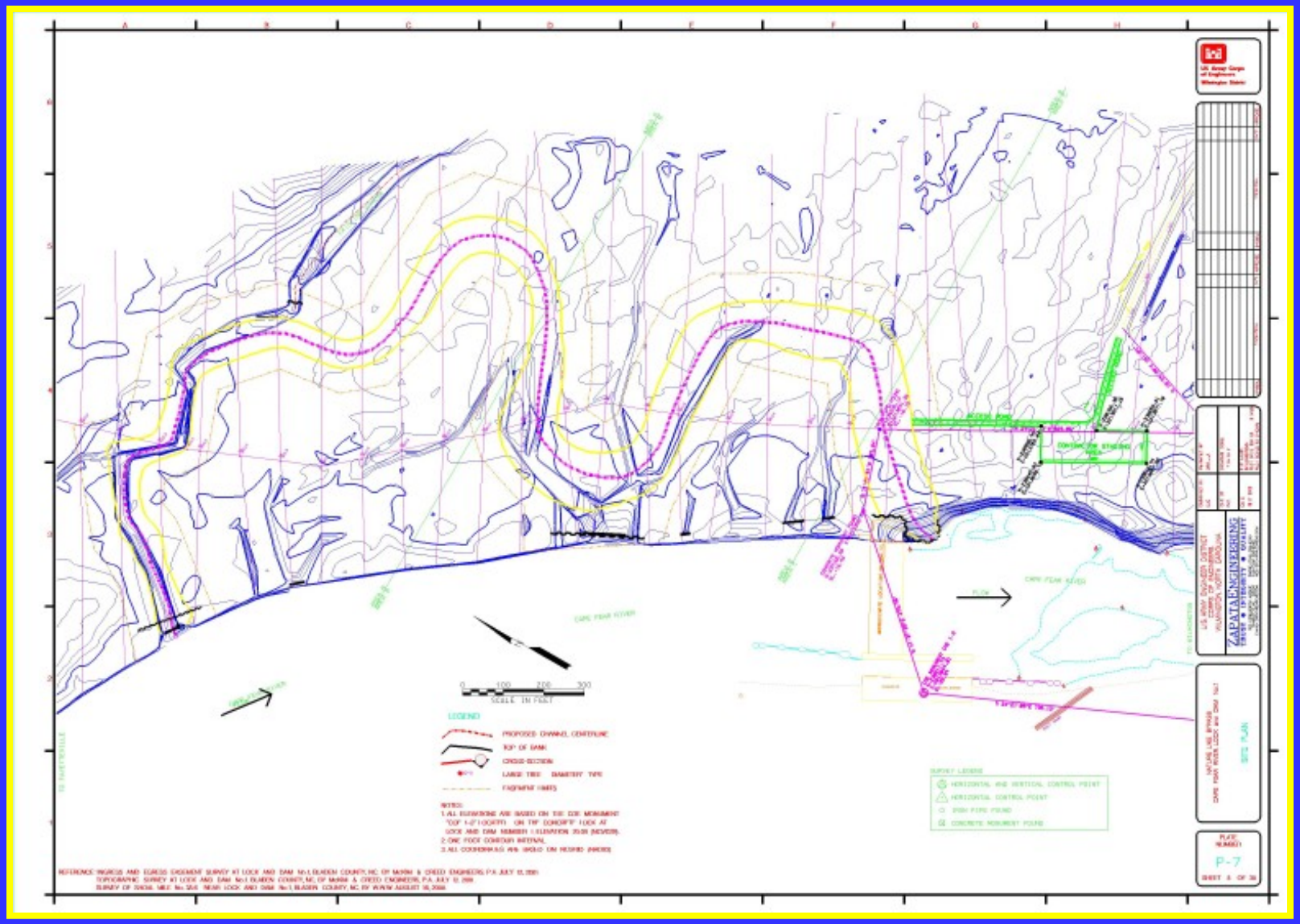
Commercial Navigation Could Continue



- 3,800 feet long
- Velocity 2 feet/sec
- 10% of river flow
- Minimum of 5 feet deep

Wilmington District

Bypass Design


LEGEND
PROPOSED CHANNEL CENTERLINE
TOP OF BANK
CROSS-SECTION
LARGE TREE DIAMETER TYPE
EASEMENT LIMITS
NOTES:
1. ALL ELEVATIONS ARE BASED ON THE USE MONUMENT "CUF 1-2" (LOCATED ON THE DOWNSTREAM LOCK AT LOCK AND DAM NUMBER 1 (ELEVATION 35.01 (NEVD88).
2. ONE FOOT CONTOUR INTERVAL.
3. ALL COORDINATES ARE BASED ON NC83(2011) (METERS)
SURVEY LEGEND
HORIZONTAL AND VERTICAL CONTROL POINT
HORIZONTAL CONTROL POINT
IRON PIPE FOUND
CONCRETE MONUMENT FOUND
SITE PLAN
P-7

Wilmington District

Better Fish Passage Alternatives?

- No commercial traffic
- Operations costs about $500-$600 thousand/year
- Locks and Dams have finite life
- Better fish passage solution considering:
  - Water supply
  - Recreation
  - Commercial and recreation fishing

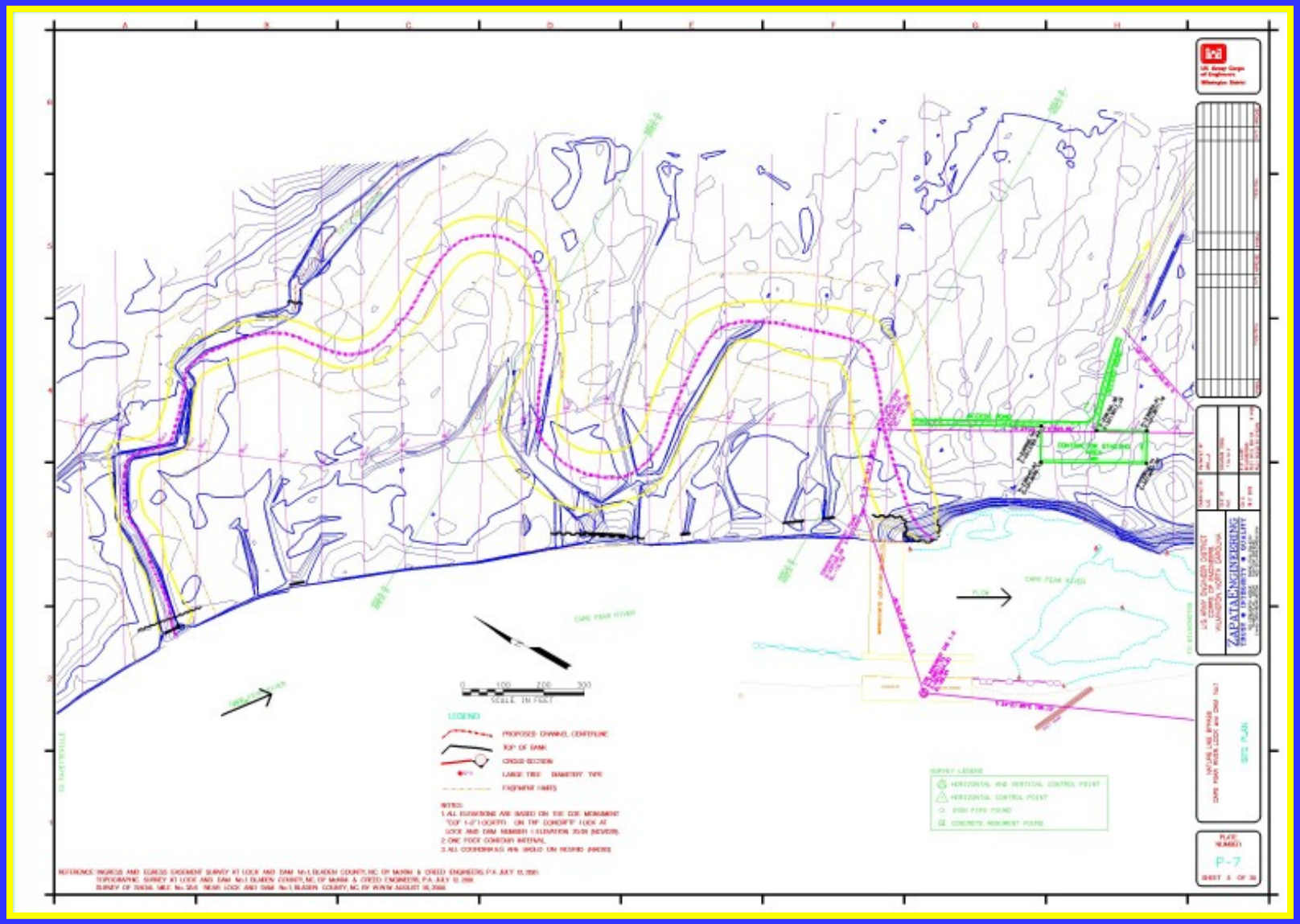
Wilmington District

Lock and Dam # 1

- **Fish passage at Lock and Dam # 1:**
  - **Deauthorization not required**
    - **Continue locking**
    - **Nature-like fish way**
    - **Diversion rock ramp**
    - **Rock ramp the entire downstream face of the dam**
  - **Deauthorization required**
    - **Rock ramp or step pool in lock chamber**
    - **Alter the dam**
    - **Lower the dam**
    - **Remove the dam**

Wilmington District

Bypass Design


LEGEND
PROPOSED CHANNEL CENTERLINE
TOP OF BANK
CROSS-SECTION
LARGE TREE DIAMETER TYPE
EASEMENT LIMITS
NOTES:
1. ALL ELEVATIONS ARE BASED ON THE USE MONUMENT "CUF 1-2" (LOCATED ON THE DOWNSTREAM LOCK AT LOCK AND DAM NUMBER 1 (ELEVATION 35.01 (NEVD88).
2. ONE FOOT CONTOUR INTERVAL.
3. ALL COORDINATES ARE BASED ON NSRS (NAD83)
SURVEY LEGEND
HORIZONTAL AND VERTICAL CONTROL POINT
HORIZONTAL CONTROL POINT
IRON PIPE FOUND
CONCRETE MONUMENT FOUND
SITE PLAN
P-7

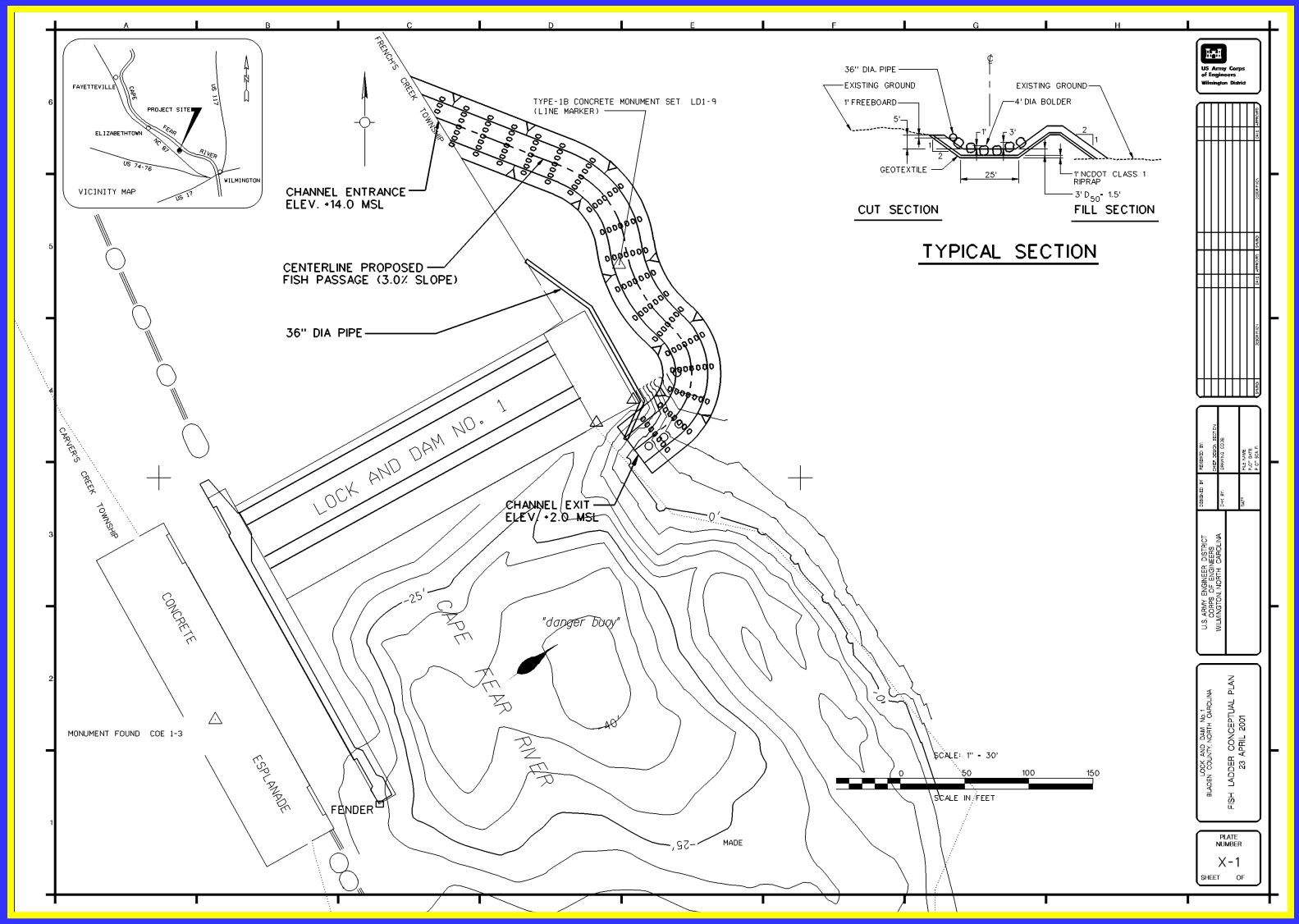
Wilmington District

Lock and Dam # 1

- **Fish passage at Lock and Dam # 1:**
  - **Deauthorization not required**
    - **Continue locking**
    - **Nature-like fish way**
    - **Diversion rock ramp**
    - **Rock ramp the entire downstream face of the dam**
  - **Deauthorization required**
    - **Rock ramp or step pool in lock chamber**
    - **Alter the dam**
    - **Lower the dam**
    - **Remove the dam**

Diversion Rock Ramp

Wilmington District



Wilmington District

Lock and Dam # 1

- **Fish passage at Lock and Dam # 1:**
  - **Deauthorization not required**
    - **Continue locking**
    - **Nature-like fish way**
    - **Diversion rock ramp**
    - **Rock ramp the entire downstream face of the dam**
  - **Deauthorization required**
    - **Rock ramp or step pool in lock chamber**
    - **Alter the dam**
    - **Lower the dam**
    - **Remove the dam**

Wilmington District

Rock Arch Rapids
Red River, Fargo, ND

Wilmington District

Rock Arch Rapids
Red River, Fargo, ND

Wilmington District

Lock and Dam # 1

- **Fish passage at Lock and Dam # 1:**
  - **Deauthorization not required**
    - **Continue locking**
    - **Nature-like fish way**
    - **Diversion rock ramp**
    - **Rock ramp the entire downstream face of the dam**
  - **Deauthorization required**
    - **Rock ramp or step pool in lock chamber**
    - **Alter the dam**
    - **Lower the dam**
    - **Remove the dam**

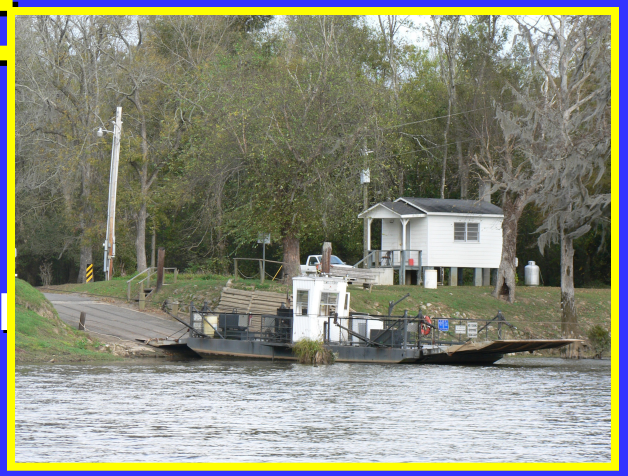
Wilmington District

Lock and Dam # 1

- **What about Water Supply?**
  - **The GRR will not contain any recommendations that compromise existing or future water supply needs!**
  - **Status quo of structures could change**
  - **Required to construct fish passage at Lock and Dam # 1, but only study Locks and Dams # 2 & # 3**
  - **MOU?**

Wilmington District

General Reevaluatio Report



- **Existing Information:**

  Operations: Documented individual private, public, & industrial boat docks, landings, boat ramps, and intake/outfall facilities above L&D #1, #2 and #3, proposed new facilities

  Planning: Water users, Waterborne Commerce, population and income, recreational activities, existing industries

Wilmington District

General Reevaluation Report

- **Planned actions for FY06:**

  Environmental:

  - Spawning areas for anadromous fish
  - Alternative analysis for fish passage
  - Sediment and chemical data behind the dams
  - Extent of wetlands upstream of lock and dams
  - Vegetation mapping and terrestrial resources

Wilmington District

General Reevaluation Report

- **Planned actions for FY06 (con't):**

  Engineering:

  - Sediment management
  - Update upstream and downstream survey data
  - Water level changes if dams altered or removed
  - Salt water intrusion
  - Stability analysis of Dam No. 1 considering effects of downstream scour hole
  - Scope of work and cost estimate for rehabilitation of lock & dams

Wilmington District

General Reevaluation Report

- Planned actions for FY06 (con't):

  Operations: Provide fish lockages to facilitate fish passage on Cape Fear River

  Planning: Water supply needs, transportation costs data and models, projections of population and income, projection of recreation activities

Wilmington District

General Reevaluation Report

- Actions for FY07: Prepare and Circulate Draft EIS
- Actions for FY08: Prepare and Circulate Final EIS, prepare Record of Decision

Wilmington District

General Reevaluation Report (GRR)

Where do we go from here?

- Notice of Intent to prepare Draft EIS published in the Federal Register January 2006
- Formed interagency team including representatives from Fayetteville
- Extensive coordination and investigations to develop solutions
- Circulate GRR and NEPA document
- Make recommendations. May require Congressional approval to implement
- 3-4 year process

Wilmington District

Wilmington Harbor GRR

?

QUESTIONS ?

Comments